UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,826	09/03/1999	HANS U. SCHROEDER	PHN-17.073	5932

24737 7590 03/31/2004

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
NADAV, ORI	
ART UNIT	PAPER NUMBER
2811	

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. Box 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 0

Application Number: 09/389,826
Filing Date: September 03, 1999
Appellant(s): SCHROEDER ET AL.

MAILED
MAR 3 1 2004
GROUP 2800

Ronald A. D'Alessandro
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/14/2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-9 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,572,394	Ker et al.	11-1996

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ker et al. (5,572,394).

Ker et al. teach in figure 9 a semiconductor device having an ESD protection means being an SCR and a gated electrode, provided in a surface area (P-SUBSTRATE) of a first conductivity type having a single well N-WELL (the middle N well where resistor RW3 is located) of a second conductivity type,

wherein a surface zone (P+) of the first conductivity type is forms a first anode and cathode area of the SCR element,

the surface area has a surface zone N+ (the N+ region located to the right of the N well) of the second conductivity type, noted as a first zone, situated remotely from the well and forming a second anode and cathode area of the SCR element,

the gated diode (located above "NTLSCR1") containing a gate insulated from the surface area and a highly doped (N+) second conductivity type surface zone aligned to

the gate denoted as a second zone, the second zone (the N+ region located to the right of the gated diode) partly overlaps the well of the second conductivity type, wherein the second zone stretches out only along a part of the periphery of the well (the second zone stretches along the left part of the well and is not present along the right part of the well), whereas the first zone N+ (the N+ region located to the right of the N well and situated "remotely from the well") is provided along at least another part of this periphery which is free from the second zone (the right part of the periphery of the well is free from the second zone), and an anode and cathode of the SCR element in the first zone are not shielded from one another by the gated diode.

Regarding claim 2, Ker et al. teach in figure 11 the gate of the gated electrode substantially stretches out only along the part of the periphery of the well along which also the second zone stretches out.

Regarding claim 3, the gated diode having a further surface zone (N+) of the second conductivity type deposited in the surface area of the first conductivity type and forming the other of the source/drain zones of the transistor, wherein the first zone being situated at a shorter lateral distance from the surface zone provided n the well than the further surface zone.

Regarding claim 4, although Ker et al. do not explicitly disclose a further zone and a first zone form a second conductivity type zone this feature is inherent in Ker et al.=s device, because Ker et al.'s structure is identical to the claimed structure.

Regarding claim 5, the first and second conductivity types are p and n conductivity types, respectively, wherein the first zone and the first conductivity type zone in the well form the cathode and anode of the SCR element, respectively.

Regarding claim 6, Ker et al. teach the well of the second conductivity type is arranged in the form of a longitudinal zone, the surface zone of the first conductivity type is formed by a longitudinal zone in the well of second conductivity type which well has in its center an opening at the position of which a highly doped zone of the second conductivity type is provided which forms a contact area for the well of second conductivity type.

Regarding claim 9, Ker et al. teach the cathode of the SCR is provided along the part of the periphery of the well of the second conductivity type that is free from the at least two gates.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ker et al.

Regarding claims 7 and 8, Ker et al. teach substantially the entire claimed structure, as applied to claims 1 and 6 above, including the gated diode being arranged as a MOS transistor having a further zone of the second conductivity type. Ker et al. do not explicitly state forming the gated diodes on the right-hand end of the longitudinal zone. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the gated diodes on the right-hand end of the longitudinal zone which comprises the insulated gate and the highly doped second conductivity type surface one which partly overlaps the well of the second conductivity type in Ker et al.'s device, since it is well within the skills of an artisan to determine the physical location of the two gated diodes on the circuit board by using layout criteria, subject to routine experimentation and optimization.

(11) Response to Argument

Appellant argues that Ker et al. do not teach a gated diode containing a gate insulated from the surface area and a highly doped second conductivity type second zone aligned to the gate, the second zone partly overlaps the well of the second conductivity type, wherein the second zone stretches out only along a part of the periphery of the well, whereas the first zone is provided along at least another part of this periphery which is free from the second zone, because figure 11 of Ker et al. depicts potentially analogous regions are co-extensive along their corresponding n-wells.. Appellant further argues that figure 4 of the claimed invention depicts a second

zone stretches out only along a part of the periphery of the well, and a first zone 14, 19 is provided along another periphery of the well which is free from the second zone.

Figure 9 of Ker et al. depicts a gated diode containing a gate insulated from the surface area and a highly doped second conductivity type second zone N+ being aligned to the gate. The second zone N+ (the N+ region located to the right of the gated diode) partly overlaps the N well of the second conductivity type. Since the second zone overlaps only part of the N well (i.e., the second zone N+ overlaps only the left side of the N well and not the right side of the N well), it stretches out only along part of the periphery of the well. The first zone (the N+ region located to the right of the N well and situated "remotely from the well"), is provided along at least another part of this periphery which is free from the second zone (the right part of the periphery of the N well is free from the second zone).

Figure 11 of Ker et al. does not depict the second zone stretches out along the right side of the N well and certainly not along the entire periphery of the well. Thus, the first zone is provided along at least another part of this periphery which is free from the second zone, as claimed.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

O.N.
March 25, 2004

Conferees:

Olik Chaudhuri OC

Eddie Lee

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Ori Nadav

CORPORATE PATENT COUNSEL
U S PHILIPS CORPORATION
580 WHITE PLAINS ROAD
TARRYTOWN, NY 10591